

REMARKS

Claims 1-24 are pending. Claims 22-24 are new and are supported by the specification at pages 6-9. No new matter has been added. Favorable consideration is requested.

Claims 1-5, 7-12, 14-19, and 21 were rejected for obviousness over U.S. Patent No. 5,758,271 to Rich et al. ("Rich") in view of U.S. Patent No. 5,930,692 to Peterzell et al. ("Peterzell"). Applicant disagrees.

Applicant's claim 1 defines an apparatus for improving the dynamic range of a receiver. The apparatus includes a processor for computing an error rate of a received signal and a low noise amplifier (LNA) with an adjustable input intercept point. The input intercept point is adjusted depending on the computed error rate.

In contrast, Rich describes a CDMA radio receiver having, among other things, a radio receiver 104, a gain controller 112, and a signal quality determiner 111. The gain controller adjusts the gain of the radio receiver in response to the quality of the received signal. The quality may be an error rate estimate of a demodulated signal.

The Action admits that Rich fails to disclose a LNA with an adjustable input intercept point, and that the input intercept point is adjusted depending on the computed error rate. The Action relies on Peterzell for the claimed features missing from Rich.

Peterzell teaches adjusting the LNA gain on a continuous basis using an adjustable gain control (AGC) at the receiver front end. A power detector 105 detects the received signal and jammer power. This detected power is used to adjust the receive AGC 110, thereby adjusting the intercept point of the receive components.

The Action asserts that it would have been obvious to one of ordinary skill in the art to modify Rich by adding a LNA as shown in Peterzell. The Action does not indicate why it would have been obvious to modify Rich in the manner suggested. The statement "to enhance processor's functionality" at best explains a possible result of a combination but does not explain why one skilled in the art would have been motivated to make the proposed combination.

Even if one would have thought to combine Rich and Peterzell, one would still have had to modify the combined teachings to obtain the features recited in Applicant's claim. Both Rich and Peterzell disclose techniques for adjusting the gain of a receiver. In Peterzell, the gain of the receiver is adjusted, thereby adjusting the intercept point of the receive components. (See Peterzell, col. 5, ll. 21-23.) Thus, one skilled in the art would conclude from Peterzell that a change in the intercept point could be realized by

changing the gain of the receiver. Nowhere in either Rich or Peterzell is it suggested that it would be possible or desirable to independently adjust the gain and input intercept point of the receiver.

In contrast to Rich and Peterzell, Applicant's claim 1 recites adjusting the input intercept point, not the gain, of the LNA. As described in Applicant's specification, e.g., at page 8, lines 5-22, the LNA gain and the LNA input intercept point are independently adjustable. Thus, even if one would have thought to combine Rich and Peterzell, one would still have had to modify the combination to provide some way to change the input intercept point independent of the gain.

Applicant submits that one skilled in the art would not have been motivated to modify Rich with the teaching of Peterzell, nor would such a combination result in the features recited in Applicant's claim. Accordingly, claim 1 is allowable over Rich and Peterzell. Claims 8 and 15 recite features analogous to those recited in claim 1, and are allowable for at least the same reasons. Claims 2-5, 7-12, 14-19, and 21 depend from claims 1, 8, or 15, and are allowable for at least the same reasons.

Claims 6, 13, and 20 were rejected for obviousness over Rich in view of Peterzell and further in view of U.S. Patent No. 5,570,373 to Wing. Because Wing does not cure the defects of Rich and Peterzell, Applicant submits that claims 6, 13, and 20 are allowable for at least the same reasons as their respective base claims.

Applicant believes that this application is in condition for allowance, notification of which is earnestly requested. If any issues remain, the Examiner is encouraged to telephone the undersigned at the below-listed number.

Respectfully submitted,

BURNS, DOANE, SWECKER & MATHIS, L.L.P.

By: 

Michael G. Savage
Registration No. 32,596

P.O. Box 1404
Alexandria, Virginia 22313-1404
(919) 941-9240

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